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RESEARCH NOTE

Creativity and Goal Conflict

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ABSTRACT: This study assessed the relation of goal conflict variables to faculty-rated creativity in advanced students of art, physics, and ecology. Neither the amount of conflict between personal strivings nor the amount of ambivalence felt toward strivings predicted ratings of creativity. However, the degree to which subjects felt that they could handle and ultimately resolve their striving conflicts was correlated with creativity. These results support the proposal that the ability to tolerate conflict is a core characteristic of creative persons. They are also consistent with the claim that creativity results from exceptional mental health rather than from illness.

Many theorists have suggested that personal conflict and creativity are related. Freud (1910, 1924), for example, asserted that creativity may result when inner conflicts are successfully sublimated into work, implying that exceptional creativity may be rooted in exceptional conflict (Taylor, 1975). Rank (1932) stated that artists must struggle with and resolve the profound conflict between self and society to reach their creative potential. More recently, Barron and Harrington (1981) suggested that a core characteristic of creative people, regardless of vocation, is their ability to tolerate internal conflict. The ongoing attempt to resolve tensions caused by opposing ideas, goals, and values within the self (Richards, 1990; Sarnoff & Cole, 1983; Storr, 1972) may help drive a large output of work, especially if the conflicts are experienced and expressed in terms of work-related themes. Quantity of output is an important aspect of creative performance because overall productivity may be one of the chief factors determining eventual creative eminence (Simonton, 1984). Besides energizing ongoing productive efforts, conflict may also enrich and deepen the quality of those efforts. The struggle to integrate conflicting ideas and values may be conducive to the development of greater cognitive complexity and hence originality (Mumford & Gustaffson, 1988; Smith & Carlsson, 1990). In fact, conflict appears to play an important role in many cognitive-developmental processes (Harter, 1986; Turiel, 1974).

Despite the prominent role given to conflict within many theoretical accounts of creativity, there have been few rigorous

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empirical efforts to assess conflict in creative people. This may be because no sophisticated methodology has existed for operationalizing conflict (Emmons & King, 1988). The research described shortly focuses on enduring life goals, using an approach that allows detailed examination of conflicts between such goals. *Personal strivings* (Emmons, 1986) are what people report that they are typically and characteristically trying to do. Examples of strivings include "trying to outperform my peers," "trying to feel connected to the people around me," and "trying to keep my anger under control."

Because strivings are elicited by open-ended self-report, the methodology yields idiographic units that are likely to have personal meaning to the subject. However, strivings also have nomothetic properties. Subjects can rate their individual strivings on various dimensions or rate the pairwise effects of strivings on each other. These ratings can then be aggregated across strivings, giving summary information about the properties of peoples' *striving systems.* Emmons and King (1988) used this technique to assess the amount of pairwise striving conflict experienced by subjects. They showed that conflict was associated with negative affectivity and was a prospective predictor of health problems. Emmons and King (1988) introduced a second way of thinking about striving conflict, noting that besides conflicting with other strivings, a striving may also "conflict with itself." That is, one may feel ambivalent about a striving, wanting both to attain it and not attain it at the same time (see Emmons, King, & Sheldon, 1993, for a recent discussion). Emmons and King (1988) showed that the extent to which subjects feel ambivalence regarding their strivings also predicted negative well-being.

Using advanced students of ecology, physics, and the visual arts, the current study measured the amount of striving conflict and ambivalence subjects experience (as in Emmons & King, 1988). In addition, it assessed how people felt about their striving conflicts. Consistent with the assertion that a defining characteristic of creative people is not conflict itself but rather an ability to tolerate conflict (Barron & Harrington, 1981), it was hypothesized that subjects' reported ability to handle or even benefit from their striving conflicts would be more predictive of creativity than would the simple amount of conflict or ambivalence reported.

Discipline-specific predictors of creativity were also examined. Theorists have more often linked conflict to creativity in the case of artistic, as opposed to scientific, activity (Gedo, 1990; Rank, 1932; Rothenberg, 1990). Presumably this is because the emotions and struggles induced by personal conflicts are more readily channeled into artistic activities, which encourage the aesthetic expression of subjective values and emotional themes (Feist, 1991; Richards, 1990). In contrast, scientific endeavors tend to demand a disavowal of subjectivity (Storr, 1983). Existing data lend indirect support to the supposition that conflict plays a different role in artistic versus scientific creativity. For example, Andreason and Glick (1988), Hammer (1984), and Jamison (1990) found that creative artists gave more indication of psychopathology than their peers. In contrast, eminent scientists have been found to be lower in insecurity and emotionality than their less eminent counterparts (Cattell, 1963; Jones, 1964). However, contradictory results exist; for example, Roe (1952) characterized her large sample of eminent scientists as motivated by a basic insecurity, and Cattell and Drevdahl (1955) found that emi-

nent research scientists were less emotionally stable than teachers and administrators within their own field. Given the ambiguous relation of conflict and personal difficulty to creativity in different fields, this study's examination of vocation-specific predictors of creativity is more exploratory than theoretically guided.

Method

Subjects

Graduate students in the physics and ecology departments of the University of California, Davis (UCD) were telephoned randomly from student lists. They were offered $10 if they participated in the research. Of those contacted, 78% agreed to participate and thus were sent the assessment materials through intracampus mail. Eighty-two percent of these people eventually completed and returned the assessment materials—20 ecology students (8 male, 12 female) and 15 physics students (12 male, 3 female). All were at least second-year students.

Art students from the Academy of Art College in San Francisco were also recruited for the study. The academy offers training primarily in commercial arts such as design, illustration, and graphics technology, although fine arts are also represented. Undergraduates from this selective and prestigious institution were assumed to be comparable, in level of talent and vocational commitment, to graduate students at UCD; commercial artists do not commonly pursue graduate education, whereas graduate training is virtually a prerequisite for the career of scientific researcher. Notices soliciting subjects were posted in public buildings at the academy, which also offered subjects $10 for their participation. Respondents to these announcements were sent the assessment materials through the mail. Eighty-six percent of respondents completed and returned the assessment materials for a total sample of 19 students (5 male, 14 female).

Measures

Strivings. After being given instructions and examples of strivings, each subject listed 10 personal strivings, defined as "what you are typically or characteristically trying to do in your everyday behavior" (Emmons, 1986, 1989). Subjects wrote these 10 strivings across the top and down the side of a 10 × 10 grid, then considered every possible pairing of strivings. Subjects gave −2 ratings to striving pairs in which the strivings were deemed to have a "very harmful effect" on each other and −1 ratings to pairings in which strivings were deemed to have a "somewhat harmful effect" on each other (Emmons & King, 1988). A striving conflict score was computed by summing these values, then taking the absolute value.

Subjects then selected their five most problematic striving conflicts (i.e., −2 ratings) for further scrutiny. If a subject had fewer than five −2 ratings, he or she was instructed to select from the most problematic −1 ratings, to bring the total up to five. Eight subjects reported (and thus assessed) fewer than five −1 or −2 ratings: Four subjects assessed four conflicts, 2 assessed three conflicts, and 2 assessed two conflicts. A few subjects had more than five −2 ratings and thus assessed more than five conflicts (eight was the maximum). To test the idea that creative people are able to tolerate conflict, subjects were asked to rate each of their conflicts as to "how confident you are that

you are handling, or will be able to invent a way to handle, that conflict," using a scale ranging from 1 (*no confidence*) to 5 (*very much confidence*). To examine the idea that creative people might actually thrive on conflict, subjects evaluated each conflict as to "the extent to which you enjoy or benefit from that conflict" (examples given in the instructions suggested that conflict may be beneficial because it is stimulating or because it forces one to face important problems). Scales ranging from 1 (*no benefit*) to 5 (*very much benefit*) were used. An index was formed for each subject for both conflict tolerance and benefit from conflict, by taking the average rating across the number of conflicts rated.

Finally, subjects' ambivalence regarding their strivings was assessed by asking them to rate, for each striving, "how unhappy you might feel if you attained that striving," using a 5-point scale. Ratings were summed across each subjects' 10 strivings to create a summary striving ambivalence variable.

Creativity. The measure of creativity was derived from faculty judgments. All 54 students were asked to identify three different faculty members who have some familiarity with them and their work and sign a consent form authorizing those faculty to complete a questionnaire about them. Students did not know that their creativity would be assessed; they were told that the short questionnaires would address "aspects of their work style." The consent form, a three-item questionnaire, and a cover letter were sent to the named faculty members. Two different follow-up letters were sent to nonresponding faculty members.

Amabile (1982) showed impressive interrater reliability in asking judges to assess the creativity of products using their own subjective definitions of creativity. Sternberg (1985) also demonstrated that people have similar implicit theories of what is creative. Accordingly, Amabile's (1982) consensual approach to assessing creativity was used. Rather than having judges give their subjective opinions regarding on-the-spot creative productions, however, faculty judges were asked to think of specific instances of work the student had produced during the course of his or her training. With these instances in mind, judges were first instructed to make a summary judgment of the originality of the student's work, using "your own, subjective definition of creativity." A second question was also posed to judges; many commentators have suggested that the ability to promote one's ideas within one's culture is a necessity if eminence is to be attained (Csikszentmihalyi, 1988; Kasof, in press; Mumford & Gustaffson, 1988; Simonton, 1984; Weisberg, 1986). Accordingly, judges were also asked to rate students on their demonstrated ability and willingness to promote their work, taking risks (Torrance, 1962) to influence others. As a third and final question, judges were asked to venture a prediction regarding the student's future record of creative accomplishment, based on the first two considerations and whatever else they deemed important. All three questions were posed to the judges with 9-point scales, ranging from 1 (*much less than average*) to 9 (*much better than average*). Judges were asked to evaluate the student in relation to the other students in the department.

Out of a total of 162 faculty questionnaires sent out, 104 were eventually returned. Twenty-one students were rated by two faculty; 17 were rated by three; 11 students were rated by only one faculty member; and for 6 students, there were no faculty judges. These six students were eliminated

from the study, leaving a final sample size of 48, which included 19 ecologists (7 male, 12 female), 15 physicists (12 male, 3 female), and 14 artists (4 male, 10 female). To form a maximally reliable index, a single composite creativity score was created for each student by averaging together all of the ratings received by that student.[1] Students who scored highest on this composite were those held in highest overall esteem by raters across the domains of demonstrated originality, demonstrated ability to promote their work, and predicted career creative accomplishment. The internal consistency of this normally-distributed composite was estimated via generalizability analysis (Cronbach, Gleser, Nanda, & Rajaratnam, 1972). Using a formula similar to one discussed by Crocker and Algina (1986, p. 181), a generalizability coefficient (which is conceptually equivalent to an alpha coefficient) of .60 was derived for the composite creativity measure, based on the average of 2.1 raters per student.

Results

Means and standard deviations for striving variables were as follows: striving conflict, 11.5, 8.1; striving ambivalence, 1.23, .9; tolerance of conflict, 3.3, .6; and benefit from conflict, 2.4, 1.0. Tolerance and benefit were significantly negatively related to amount of striving conflict ($rs = -.33$ and $-.26$; implying that high levels of conflict are in fact problematic). Tolerance and benefit were positively but insignificantly correlated with each other ($r = .20$).

[1]All ratings were separately standardized within each discipline, so that mean differences in the ratings given by artist and scientist faculty members would be removed.

As expected, neither the amount of striving conflict nor the amount of striving ambivalence reported by subjects was related to creativity ($rs = .04$ and $.09$). The amount subjects reported benefiting from conflict was also unrelated to creativity ($r = .05$). However, subjects' felt ability to handle and resolve conflict was significantly correlated with creativity ($r = .36$, $p < .01$). Thus, the hypothesis that the best predictor of creativity would be the person's ability to tolerate conflict received support.

Next, predictors of creativity within each group were examined. Neither conflict nor ambivalence was significantly correlated with creativity in any group. Confidence in handling conflict was significantly correlated with creativity in both the ecologist ($r = .55$, $p < .05$) and the artist group ($r = .59$, $p < .01$) but was unrelated to creativity within the physicist group. Benefit from conflict was significantly correlated with creativity for the physicists ($r = .46$, $p < .01$) but not for the artists or ecologists. These results imply that creative physicists find conflict to be both more problematic and more useful than do creative ecologists and artists. It should be noted, however, that the small sample sizes involved do not allow firm conclusions regarding vocation-specific predictors of creativity.

Specific conflicts of creative and less creative subjects may concretize the statistical findings. The ecologist receiving the highest creativity rating indicated that the striving "consider the effect my actions will have on others" conflicted with "speak honestly to others" and "dress comfortably rather than attractively." She indicated *much confidence* in handling and resolving these conflicts. In contrast, the least creative ecologist rated "help others" and "succeed academically" as being in conflict and also "keep in contact

with friends" conflicted with "accomplish daily tasks." This subject indicated only *little* and *moderate confidence* in being able to resolve the two conflicts. Similarly, the most creative artist was *very confident* that she could resolve the conflict between "do well in school" and "experience new things, travel," and between the latter striving and "get a great designer job." In contrast, the least creative artist indicated little confidence in his ability to resolve conflicts between "experience new things" and "avoid being the center of attention," and between "be open to new ideas" and "avoid stress." Similar patterns held for the most and least creative physicists, but they were distinguished by their differential experience of benefiting from conflicts.

Discussion

A major point of contention in the creativity literature has involved the relation of mental health and creativity (MacKinnon, 1978; Richards, 1990; Taylor, 1975). Psychodynamic theorists have often argued for an illness model, in which creative achievement is a compensation for deep personal problems (Freud, 1910, 1924) or inferiorities (Adler, cited in Ansbacher & Ansbacher, 1964). In contrast, humanistic theorists have argued that creativity is an outcome of exceptional psychological health (Maslow, 1959; Rogers, 1959). The current results support the latter assertion. Striving conflict and ambivalence, variables that have been previously shown to be related to negative well-being (Emmons & King, 1988), were not predictive of creativity. Instead, creativity was correlated with subjects' degree of confidence in their ability to handle and resolve their conflicts or, in the case of the physicists, subjects' feeling of benefiting from their conflicts.

Thus, these data suggest that although creative people have no more conflicts than their peers, they have a different attitude toward what conflicts they do have. Personal difficulty and internal struggles may be viewed not as something to be feared or avoided, but rather as necessary for growth and achievement (Fromm, 1959; Maslow, 1959). The "tolerance of striving conflict" measure used herein may be diagnostic of such a trait-like resilience (Flach, 1990; Schubert, 1988) in the face of internal conflict and stress, a trait that is likely to help people to deal constructively and creatively with the quandaries and difficulties encountered at work.

One weakness of this correlational study is that it cannot determine whether creative subjects' reported confidence in their ability to handle conflict is a cause or an outcome of their creativity. The most that can be said is that the ability to tolerate conflicts may be predictive of creativity. Another weakness is that we do not know if students rated as creative by faculty will actually go on to make original career contributions. However, these preliminary results are encouraging and lend new support to the idea that the ability to tolerate conflict is a core characteristic of creative people (Barron & Harrington, 1981).

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